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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/922,099 | 08/03/2001 | Chih-Wen Huang | JCLA7249 | 8700 |

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| EXAMINER | |
|---|---|
| WORKU, NEGUSSIE | |
| ART UNIT | PAPER NUMBER |
| 2625 | |

DATE MAILED: 04/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/922,099 | HUANG ET AL. | |
| | Examiner | Art Unit | |
| | Negussie Worku | 2626 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *10 February 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 15, 23 and 27* is/are rejected.

7)☒ Claim(s) *2-14, 16-22, 24-26 and 28-30* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 August 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Negussie Worku 4/6/06

DOUGLAS Q. TRAN
PRIMARY EXAMINER

**Attachment(s)**

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: _____.

## DETAILED ACTION

1. Applicant's amendments/arguments, filed on Feb 10, 2006, with respect to claims 1-22 and newly introduced claims 23-30, have been reviewed and fully considered. However, upon further consideration, a new ground(s) of rejection is made in view of the final office action indicated below.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beeson (6,657,749) in view of Spears et al. (US2002/0140996).

With respect to claim 1, Beeson discloses a compensation apparatus (fig 1 through 3, for image scan 100 shown by fig 1), comprising; a set of calibration

photosensitive devices, (CCDs 318, 314 of fig 1) approximately located at two sides of a set of scan photosensitive devices, (314 and 318 of fig 1) said set of calibration photosensitive devices capable of obtaining a set of calibrated images by detecting the calibration board; and an image processor, (124 of fig 3) capable of calculating an optical path deviation based at least in part on the calibration images to adjust the scanned image, (controller 124 of fig 1, a microprocessor calculates image data for the pixel location, col.6, lines 48-55),

Although Beeson shows a calibration pattern 300 of fig 3, Beeson fail to teach a set calibration boards, having two calibration boards located at two sides of the platform.

Spears et al. in the same area of optical image scanner for compensation for illumination of non uniformity (as shown by fig 2 and 3) teaches a set of calibration boards (204 and 206 of fig 2 and 3), having two calibration boards located at two sides of the platform (platform 202 of fig 2 and 3, see col.3, paragraph 0025, lines 1-5).

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified the image reading apparatus for performing a correction device of Beeson to include: a set calibration boards, having two calibration boards located at two sides of the platform.

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified the image reading and correction device of Beeson by the teaching of Spears et al. for the reason that, the second calibration strip is used to compensate for variation in lamp intensity during a scan. It would have been

allowed users to improve image quality resulting from (1) non-uniform photo sensor sensitivity, (2) non-uniform illumination, (3) contamination in the optical path, such as dust on lens or other optical components, as discussed by Spears et al. in (col.2, Paragraph 0014, lines 1-6).

With respect to claim 15, Beeson discloses a compensation apparatus (fig 1 through 3, for image scan 100 shown by fig 1), comprising; a set of calibration photosensitive devices, (CCDs 318, 314 of fig 1) approximately located at two sides of a set of scan photosensitive devices, (314 and 318 of fig 1) said set of calibration photosensitive devices capable of obtaining a set of calibrated images by detecting the calibration board; and an image processor, (124 of fig 3) capable of calculating an optical path deviation based at least in part on the calibration images to adjust the scanned image, (controller 124 of fig 1, a microprocessor calculates image data for the pixel location, col.6, lines 48-55),

Although Beeson shows a calibration Pattern 300 fig 3, Beeson fail to teach a calibration boards, having one-calibration boards located at one sides of the platform.

Spears et al. in the same area of optical image scanner for compensation for illumination of non uniformity (as shown by fig 2 and 3) teaches a set of calibration boards (206 of fig 2 and 3), having two calibration boards located at two sides of the platform (platform 202 of fig 2 and 3, see col.3, paragraph 0025, lines 1-5).

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified the image reading apparatus for

performing image correction device of Beeson to include: a calibration boards, having one calibration boards located at one sides of the platform.

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified the image reading and correction device of Beeson by the teaching of Spears et al. for the reason that, the calibration strip is used to compensate for variation in lamp intensity during a scan. It would have been allowed users to improve image quality resulting from (1) non-uniform photo sensor sensitivity, (2) non-uniform illumination, (3) contamination in the optical path, such as dust on lens or other optical components, as discussed by Spears et al. in (col.2, Paragraph 0014, lines 1-6).

5. Claims 23 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okita et al. (USP 6,657,748) in view of Beeson (USP 6, 657,740).

With respect to claim 23, Okita et al. teaches a method (fig 1-3) comprising: obtaining a calibrated image by detecting a calibration board (a standard white board 7 of fig 1A) approximately located at one side of a platform of a scanner (fig 1A).

Okita dose not expressly disclose a set of calibration photosensitive devices; and calculating an optical path deviation based at least in part the on the calibration image to adjust the scanned image.

However, Beeson in the same area of image scanning apparatus (fig 1) teaches a set of calibration photo-sensitive devices (CCDs 318, 314 of fig 1); and calculating an optical path deviation based at least in part the on the calibration image to adjust the

scanned image, (controller 124 of fig 1, a microprocessor calculates image data for the pixel location, col.6, lines 48-55).

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified the image reading apparatus for performing image correction device of Okita to include: a set of calibration photo-sensitive devices; and calculating an optical path deviation based at least in part the on the calibration image to adjust the scanned image.

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified the image reading and correction device of Okita by the teaching of Beeson for the reason that, the calibration strip is used to compensate for variation in lamp intensity during a scan. It would have been allowed users to improve image quality resulting from non-uniform photo sensor sensitivity and non-uniform illumination.

With respect to claim 27, Okita et al. teaches a method (fig 1-3) comprising: obtaining a calibrated image by detecting a calibration board (a standard white board 7 of fig 1A) approximately located at one side of a platform of a scanner (fig 1A).

Okita dose not expressly disclose a set of calibration photosensitive devices; and calculating an optical path deviation based at least in part the on the calibration image to adjust the scanned image.

However, Beeson in the same area of image scanning apparatus (fig 1) teaches a set of calibration photo-sensitive devices (CCDs 318, 314 of fig 1); and calculating an

optical path deviation based at least in part the on the calibration image to adjust the scanned image, (controller 124 of fig 1, a microprocessor calculates image data for the pixel location, col.6, lines 48-55).

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified the image reading apparatus for performing image correction device of Okita to include: a set of calibration photo-sensitive devices; and calculating an optical path deviation based at least in part the on the calibration image to adjust the scanned image.

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified the image reading and correction device of Okita by the teaching of Beeson for the reason that, the calibration strip is used to compensate for variation in lamp intensity during a scan. It would have been allowed users to improve image quality resulting from non-uniform photo sensor sensitivity and non-uniform illumination.

### *Objected to claims having Allowable Subject Matter*

6. Claims 2-14, 16-22, 24-26 and 28-30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

With respect to claims 2 and 16 the prior art does not teach or disclose the compensation apparatus, wherein the set of calibration photosensitive devices is formed

of a plurality of calibration photosensitive devices arranged in a L x K array at two sides of the set of scan photosensitive devices, and L and K are integers larger than 1.

With respect to claims 3 and 17 the prior art does not teach or disclose the compensation apparatus, wherein the set of scan photosensitive devices is formed of a plurality of scan photosensitive devices, and the calibration photosensitive devices have a dimension smaller than that of the scan photosensitive devices.

With respect to claims 4 and 18 the prior art does not teach or disclose the compensation apparatus, wherein the calibration boards have a strip shape and a width increasing linearly along a scanning direction.

With respect to claims 5 and 9 the prior art does not teach or disclose the compensation apparatus, wherein the strip-like calibration boards have trapezium planes.

With respect to claims 6 and 10 the prior art does not teach or disclose the compensation apparatus, wherein the strip-like calibration boards have triangle planes.

With respect to claims 7 and 11 the prior art does not teach or disclose the compensation apparatus, wherein the strip-like calibration boards have curved perimeters.

With respect to claims 8 and 19 the prior art does not teach or disclose the compensation apparatus, wherein the strip-like calibration boards have widths decreasing linearly along a scanning direction.

With respect to claims 12 and 20 the prior art does not teach or disclose the compensation apparatus, wherein the image processor extracts and compares the calibrated images to calculate an optical path deviation, and magnitude and direction of the optical path deviation are calculated according to pattern proportion and position variations of the calibrated images of the calibration boards detected by the set of calibration photosensitive devices.

With respect to claims 13 and 21 the prior art does not teach or disclose the compensation apparatus, wherein the method to calculate the optical path deviation includes: calculating the optical path deviation in x-axis according to position alteration of the calibrated images detected by the set of calibration photosensitive devices; calculating the optical path deviation in y-axis according to position alteration of the calibrated images detected by the set of calibration photosensitive devices; and calculating the optical path deviation in z-axis according to position alteration of the calibrated images detected by the set of calibration photosensitive devices.

With respect to claims 14 and 22 the prior art does not teach or disclose the compensation apparatus, wherein the method to calculate the optical path deviation

further includes: calculating the optical path deviation twisting around y-axis according to the optical path deviation in z-axis; and calculating the optical path deviation twisting around z-axis according to the optical path deviation in y-axis.

With respect to claims 24 the prior art does not teach or disclose the method further, comprising: extracting and comparing the calibrated image to calculate said optical path deviation magnitude and direction based at least in part on a proportion and displacement of the calibrated image of the calibration board detected by the set of calibration photosensitive devices.

With respect to claims 25 the prior art does not teach or disclose the method, further comprising: calculating the optical path deviation in an x-axis according to a displacement of the calibrated image detected by the set of calibration photosensitive devices; calculating the optical path deviation in a y-axis according to the displacement of a calibrated image detected by the set of calibration photosensitive devices;

With respect to claims 26 the prior art does not teach or disclose the method, further comprising: calculating the optical path deviation twisting around y-axis according to the optical path deviation in the z-axis; and calculating the optical patll deviation twisting around z-axis according to the optical path deviation in the y-axis.

With respect to claims 28 the prior art does not teach or disclose the apparatus: means for exacting and comparing the calibrated image to calculate said optical path deviation magnitude and direction based at least in part on a pattern proportion and a displacement of the calibrated image of the calibration board detected by the set of calibration photosensitive devices.

With respect to claims 29 the prior art does not teach or disclose the apparatus, further comprising: means for calculating the potboil path devbltïon in an x-axis according to a displacement of the calibrated image detected by the set of calibration photosensitive devices; means for calculating the optical path deviation in a y-axis according to the displacement of the calibrated image detœted by tlle set of calibration photosensitive devices; and means for calculating the optical path deviation in a z-axis according to the displacement of the calibrated image detected by the set of calibration photosensitive devices.

With respect to claims 30 the prior art does not teach or disclose the apparatus further comprising: means for calculating the optical path deviation twisting around the y-axis according to the optical path deviation in the z-axis; and means for calculating the optical path deviation twisting around the z-axis according to the optical path deviation in the y-axis.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Negussie Worku whose telephone number is 305-5441. The examiner can normally be reached on 7am-4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Moore can be reached on 571-272-7437, the fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Negussie Worku
04/5/06

DOUGLAS Q. TRAN
PRIMARY EXAMINER